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ABSTRACT

This paper presents the results of an educational equity program designed to reduce racial and sexual stereotyping at all grade levels among students. The project was instituted in a southeastern United States school district in 1981. Following evaluations in 1980-81 and 1981-82, this present study was conducted: (1) to determine whether participating students' attitudes toward sex roles changed significantly toward becoming less stereotypic, and (2) to identify particular grade levels at which students seemed to be more susceptible to change. Project activities included inservice sessions on equity topics designed to help teachers become aware of inequitable classroom practices and ways of remediating them. In addition, unbiased classroom materials or materials which reduce bias and stereotypic thinking were provided. Students were then administered four separate grade-appropriate instruments, using the Attitudes Toward Sex Roles (ATSR) instrument. Results showed that: (1) students' attitudes became less stereotypic during the second year for most groups, but the effects were not uniform for all grades, (2) individual grade cohorts showed significant movement toward androgyny, and (3) the greatest changes in students' attitudes toward sex roles occurred in the kindergarten and grade seven cohorts. (AOS)

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MAXIMIZING STUDENTS' EDUCATIONAL AND CAREER CHOICES:

RESULTS OF A TWO-YEAR EQUITY PROJECT

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Maximizing Students' Educational and Career Choices: Results of a Two-Year Equity Project

Project NEED (National Educational Equity Demonstration) is an educational equity program designed to reduce stereotyping due to race and sex at all grade levels. The project became operational on a system-wide basis in fall, 1980, at a demonstration site in the Southeast. Part of the project evaluations in 1980-81 and 1981-82 focused on sex-role attitudes of the students at all grade levels. Data were available for all grade levels for two years by the end of 1981-82. It was hoped that in addition to whether or not students were becoming less stereotypic with respect to sex roles the data would answer the more specific question about the grade levels at which attitude changes were most likely to occur.

Much of the previously reported research has focused on kindergarten and preschool-age children or on comparison of students at grade intervals. The purpose of the present investigation was to determine whether or not students' attitudes changed significantly toward becoming less stereotypic and to identify particular grade levels at which students seemed to be more susceptible to change if attitude changes were not effected uniformly across grade levels.

Method

Subjects

Subjects for the study were students in a Southeastern school district which was involved in a system-wide educational equity project during 1980-81 and 1981-82. Equity project activities consisted of: (1.) inservice sessions on equity topics designed to help teachers become aware of inequitable practices in the classroom and ways of remediating them, and (2.) making available materials for classroom and professional use which were not biased

or which sought to reduce bias and stereotypic thinking. Attendance at inservice sessions was voluntary as was use of equity materials. A total of 24 inservice sessions of two contact hours each were conducted during 1980-81 and 20 in 1981-82. Materials were made available through the librarians in the respective schools on an open access basis through a system coordinator.

Project staff identified two of the five elementary schools (grades K-5) as being highly involved in 1980-81 and two as low involved on the basis of faculty involvement as shown through attendance at equity inservice sessions along with self-reported use of equity materials and changes in classroom practices. The levels of faculty involvement in the various elementary schools in 1981-82 indicated that the initial difference in involvement between school faculties had been mitigated so that differences in student effects in 1980-81 might also be less noticeable in 1981-82. Teachers in the middle school (grades 6-7) were minimally involved during 1980-81 due to involvement in another project at that time.

Since some elementary schools were known to be less involved than others in 1980-81, students from high-involved elementary schools were compared with those from the low-involved schools on grade-appropriate sex-role attitude measures. Thus elementary school students who had transferred from one school in 1980-81 to another in 1981-82 which was not at the same level of involvement were necessarily deleted from the study. In 1980-81 and in 1981-82, student attitude instruments for which there was either a missing response or multiple responses to an item were deleted from analysis because they did not yield a total score. This further decreased the data sets for the K-2 and 3-6 analyses for this comparison.

In looking at scores for a grade-level group across the two years, a grade cohort is used to denote the group and is labeled according to the grade level of the student during the first year, 1980-81. Thus the kinder-

garten cohort refers to that group of students whose grade level in 1980-81 was kindergarten and in 1981-82 was first grade. If a significant change was noted for this group between 1980-81 and 1981-82, that change would have occured during the first grade since the time between the two times of measurement was spent, for these students, in the first grade.

Measures

In May, 1981, and again in May, 1982, all students in the school system were administered the following instruments: the "Who Should" test (Primary Form) for students in kindergarten through grade two; "Who Should" test (Intermediate level) for grades three through six; "Your Opinion" for grades seven through nine; and "Attitudes Toward Sex Roles" for grades ten through twelve.

The primary form of the "Who Should" (Project Equality, 1976) was used for students in kindergarten, grades one and two. The student was given an answer sheet containing 12 blocks. Block number one contained a drawing of a boy and a drawing of a girl. The student was instructed to circle the figure which represented the student's sex. Blocks two through twelve each contained, in addition to the separate male and female figures, a male and a female standing beside each other to represent both sexes. As the teacher read a list of items, the student responded by circling the boy, the girl, or both figures together. Items asked who should do certain tasks in the classroom, in the home, at play, or as an occupation. A high total (close to the maximum of 11) indicated equitable attitude.

The intermediate form of the "Who Should" (Project Equality, 1976) for grades three through six contained 47 items. The student circled the word "man," "woman," or "both" to indicate who the student thought should perform each of the 19 occupations, 6 class jobs, 16 home tasks, and 6 leisure activities in the instrument. Scores could range from 0 to 47, depending

on the number of items designated as "both" with a high score thus indicating an equitable attitude.

Students in grades seven through nine completed the "Your Opinion" instrument (Bergstrom, 1976). The instrument consisted of 27 items differing in content and nature from those of the two "Who Should" tests. "Your Opinion" items were statements reflective of personal feelings, beliefs, and attitudes toward the roles played by the sexes. Items were related to both masculine and feminine traditional and nontraditional behavior. The student responded to each item on a 5-point Likert scale (1=Strongly Agree; 5=Strongly Disagree). Scores could range from 27 to 135, with a low score indicating traditional orientation on the part of the student.

The "Attitudes Toward Sex Roles" (ATSR) instrument (Hawley, 1975) which was used with students in grades 10 through 12 consisted of 35 items similar to those in the "Your Opinion" dealing with general beliefs and behaviors rather than specific occupations and tasks. Student response options ranged from one (Very Strongly Agree) to six (Very Strongly Disagree). Possible total scores had a range of 35 to 210. In contrast to the other three instruments, a high score on the ATSR denotes a dichotomous attitude while a low score signifies an androgynous or equitable attitude. For the other three, an equitable attitude is shown by a high score.

Procedures

All testing was done by homeroom teachers. To avoid the loss of one grade-level group for three of the four instruments for repeated measures analysis (the grade-level cohort changing instruments from 1980-81 to 1981-82), regression analyses were performed to determine the relationships between the two instruments taken by students in the second, sixth, and ninth grade cohorts. Previous investigation had already shown the instruments to be highly correlated. Regression equations were computed using data from students

from the third, seventh, and tenth grades from outside the project school system who were each administered two instruments--the one for the grade just completed and the one for the current grade. The resulting equations provided the basis for converting 1980-81 scores for students in grades two, six, and nine to scores which could be compared with the 1981-82 scores on a different test. The resulting equations were:

$Y = 5.539 + 3.80894X$ where X = primary form Who Should score and Y = intermediate form Who Should score

$Y = 73.09884 + .66576X$ where X = intermediate form Who Should score and Y = Your Opinion score

$Y = 186.37735 + (-.85871)X$ where X = Your Opinion score and Y = ATSR score

The negative X coefficient in the last equation is due to the reciprocal relationship between the two instruments: an androgynous attitude is shown by a high score on the Your Opinion but by a low score on the ATSR. Regression equations were derived using the New Regression program of the Statistical Package for the Social Sciences Update 7-9 (Hull & Nie, 1981).

Results

Repeated measures analyses of variance were used to analyze the data. A separate analysis was performed on each of the four measures included in the study. Factors were grade cohort (grade which the students were in during the 1980-81 school year), year (1980-81 and 1981-82), and, for the K-2 and 3-6 instrument analyses, group level of involvement of the respective schools (high and low). Scheffe comparisons were used to investigate inter-

action effects, using a .05 significance level.

Who Should Primary Form

The analysis of the K-2 data revealed a significant main effect for grade cohort ($F=9.49$, $df=1$, $p=.002$) and year ($F=13.4$, $df=1$, $p<.001$). However, there were significant interactions for grade cohort by group ($F=11.73$, $df=1$, $p<.001$) and group by year ($F=44.59$, $df=1$, $p<.001$), both of which were overshadowed by the grade cohort by group by year interaction ($F=22.80$, $df=1$, $p<.001$). Figure 1 shows the relationships between group mean.

Insert Figure 1 about here

Although students in the high involved first grade cohort were significantly more androgynous than those in the high involved kindergarten cohort in 1980-81, the difference was not significant in 1981-82 due to the dramatic increase in scores by the kindergarten cohort. This change in the attitudes of students in the high involved kindergarten cohort also resulted in their being significantly more androgynous than the low involved kindergarten cohort in 1981-82. Students in the high involved first grade cohort were more androgynous both years than those of the low involved first grade cohort.

Who Should Intermediate Form

There were no significant main effects for group, grade cohort, or year for grades 3-6. There was a significant grade cohort by group interaction ($F=5.41$, $df=3$, $p=.001$) and a significant grade cohort by year interaction ($F=8.20$, $df=1$, $p<.001$). The three-way grade cohort by group by year interaction was not significant. The Scheffe post hoc comparisons showed that differences between high involved and low involved groups were significant for the second and third grade cohorts only as is shown in Figure 2.

Insert Figure 2 about here

There was no significant improvement in attitude scores between 1980-81 and 1981-82 for any grade cohort although the fourth and third grade cohorts became noticeably more androgynous. The nonsignificant change in mean for the fourth grade cohort from 1980-81 to 1981-82 of 6.63 was close to the difference of 7.13 between the fourth and fifth grade cohorts in 1980-81 which was significant. The second and fifth grade cohorts showed little change, with the fifth grade cohort showing a slight shift toward more stereotypic thinking. As a result, there were no significant differences between grade cohorts in 1981-81 whereas in 1980-81 the fourth grade cohort had been significantly more stereotypic than the fifth grade cohort.

Insert Figure 3 about here

Your Opinion

A significant main effect was found for both year ($F=59.15$, $df=1$, $p<.001$) and grade cohort ($F=10.38$, $df=2$, $p<.001$). As was true for the Intermediate Who Should instrument, there was a significant interaction between grade cohort and year ($F=9.50$, $df=2$, $p<.001$). While all grade cohorts became more androgynous in 1981-82, the only significant increase in scores was for the seventh grade cohort. While the eighth grade cohort scored significantly higher than the sixth grade cohort in 1980-81, it was the seventh grade cohort which was significantly more androgynous in attitude than the sixth grade cohort in 1981-82 as is shown in Figure 4.

Insert Figure 4 about here

Attitudes Toward Sex Roles

The analysis for grades 10-12 yielded a significant main effect for year ($F=10.60$, $df=1$, $p=.001$) indicating that students' 1981-82 scores were significantly more androgynous than their 1980-81 scores (a lower score reflects androgyny on the ATSR). No significant differences were found for either grade cohort or the

grade cohort by year interaction although the interaction effect approached significance ($F=3.28$, $df=2$, $p=.039$), reflecting the fact that while both the ninth and tenth grade cohorts moved toward androgyny (mean differences were -3.48 and -4.917 respectively), the eleventh grade cohort actually became slightly more stereotypic in attitude (mean difference = +.1239) during the second year.

Discussion

Results showed tnat there were significant changes in students' attitudes toward sex roles as the project progressed from 1980-81 to 1981-82 for students taking the K-2, 7-9, and 10-12 instruments. The effects were not uniform for all grades, however, as shown by significant year by grade interactions for students taking the 7-9 Your Opinion, group by grade by year interaction for the Primary Form of the Who Should, and group by grade and grade by year interactions for the Intermediate form of the Who Should. Individual grade cohorts showing significant movement toward androgyny included the kindergarten cohort of high involved students and the seventh grade cohort.

A significant group (level of involvement) by year interaction was not entirely unanticipated in grades K-2 and 3-6. While project staff felt reasonably comfortable in differentiating between elementary schools on the basis of staff involvement in 1980-81, they did not feel they could do so in 1981-82. If, indeed, project involvement increased in low involved schools in 1981-82 and the project had an effect, this might have induced greater changes in attitude scores for low-involved schools than for high-involved schools where students had already been exposed to a higher level of involvement. This effect was found although it was a differential one, affecting some grade cohorts more than others.

Kindergarten students in low involved schools, for some reason, had a higher mean ($\bar{x} = 4.65$) than those in high involved schools ($\bar{x} = 2.97$) in 1980-81. In 1981-82, the same group of low involved students showed a decline of 1.03 in mean ($\bar{x} = 3.62$) while the mean for the high involved students had shown a substantial

increase ($\bar{x}$ = 6.52).

The increases in means for students in both high (.73) and low-involved groups (.72) from 1980-81 to 1981-82 for the first grade cohort were almost identical. A change in attitude, if one is to occur, seems likely to come during the first grade (between kindergarten and first grade testing) with attitudes remaining fairly consistent during the second grade.

Means for students in the second and fifth grade cohorts changed little from 1980-81 to 1981-82 while students in the third and fourth grade cohorts became less stereotypic. Attitude scores for students in the high involved group showed that students in the second grade cohort across both years had the least stereotypic attitudes, followed by the third, fifth, and fourth grade cohorts. Among the low-involved students, the fifth grade cohort had the least stereotypic attitude. For both high and low involved groups, student attitudes of the fourth grade cohort seemed to be more stereotypic than those of either the third or fifth grade cohorts.

For students in the sixth through eighth grade cohorts, the significant year by grade cohort interaction reflects not a change in direction of attitude for one cohort but rather a difference in the amount of change in the same direction. All cohort groups became more equitable in their views between 1980-81 and 1981-82, but the largest change was noted in the seventh grade cohort (with an increase of 6.724). The sixth grade cohort became more positive in seventh grade (+3.797) and surpassed the mean of the seventh grade cohort when they had been seventh graders the previous year. Students in the eighth grade cohort changed even less (+1.316) although they were also moving in the desired direction. It must be noted that the students in the sixth grade cohort were middle school students in 1980-81 and that the middle school faculty was not heavily involved in the equity project that year. In effect, the gains of this group might be attributed to their

first year in contact with involved faculty rather than second year involvement as was true of the students in the seventh and eighth grade cohorts.

The tendency toward a significant interaction for students taking the ATSR resulted from small positive shifts in attitude scores for students in the ninth and tenth grade cohorts contrasted with a small negative change for the eleventh grade cohort. The overall significant improvement in scores for the 10-12 group is attributable to the ninth and tenth grade cohorts.

With the exception of the fifth and eleventh grade cohorts and the kindergarten cohort of the low involved group, the attitude scores of all groups moved toward androgyny between 1980-81 and 1981-82. There is evidence that students' attitudes toward sex roles most affected were those of the kindergarten high-involved cohort, and the seventh grade cohort. This means that significant changes occurred when the students were in grades one and eight with a clearly observable change also noted in the fifth grade (fourth grade cohort). This is not to say that activities should be abandoned during other grades since they may be necessary to maintain and reinforce newly acquired attitudes.

Even though significant results were obtained, there were problems inherent in the collection of data for longitudinal comparisons in this setting.

1. Teacher involvement varied. Even though an elementary school was designated as a high-involved school, there were still teachers within that school who were less enthusiastic than others. The measurement of teacher level of involvement lacked precision. Teacher involvement was

partially based on self-report information regarding the use of materials and classroom activities. In the middle school, junior and senior high schools, students may have had different numbers of teachers involved in the project in 1980-81 and in 1981-82. Efforts were made to assess the number of involved teachers each student had in 1980-81, but the measures proved less than satisfactory.

2. Teacher cooperation and commitment were critical since teachers who did the testing were part of the treatment. Lack of commitment was shown when absentees were not tested. Many blank forms were returned with the notation that the student was absent. Since test administration was dependent on the teachers, this may have produced a slightly biased sample.

3. Scores were not available for all students because many forms were incomplete or had been marked incorrectly. This was particularly true for the primary form of the Who Should. Differences could be noted between classroom groups. Some classes were characterized by forms on which the students had circled more than one response or omitted items while other classes were almost uniformly correctly marked. Again, this may be partially a reflection of the interest and/or conscientiousness of the teacher administering the instrument.

4. Teachers frequently relied on the students to write or print their own names on the identification slips. Many names were illegible, and many more consisted of only the first name which made questionable the matching of forms in 1981-82. This problem was resolved administratively in 1981-82 by obtaining homeroom lists and having students' names already on the identification slips when the forms were distributed to the teachers.

5. In a project which was not uniformly implemented, as was true of this one, data were reduced when students transferred within the system from high to low involved schools or vice versa. This also tends to introduce

contamination of the project effect if the project is not subsequently introduced into the low-involved schools.

6. Choice of instruments. It was difficult to find existing instruments to measure sex role attitudes with established reliability and validity, and since longitudinal data were to be collected, it was desirable to have instruments for adjacent grade levels which were highly correlated. Instrument correlations were established as part of the project as well as the internal reliability of one of the instruments for which it had not previously been demonstrated.

As has been noted, there have been problems in maintaining strict research standards. This is not unusual when research takes place in educational settings. Some conclusions were reached on the basis of this study, but limitations have also been noted so that if others pursue the subject further they can perhaps cope with the limitations in their planning.

Another comment which must be made concerns behavioral changes which reflect attitudes toward sex roles. There was a considerable increase in enrollment in non-traditional courses in the secondary school (grades 9-12) from 1980-81 to 1981-82. Although means on the written attitude measures changed little, this does indicate that changes are occurring in that students perceive themselves as having greater opportunities open to them in high school.

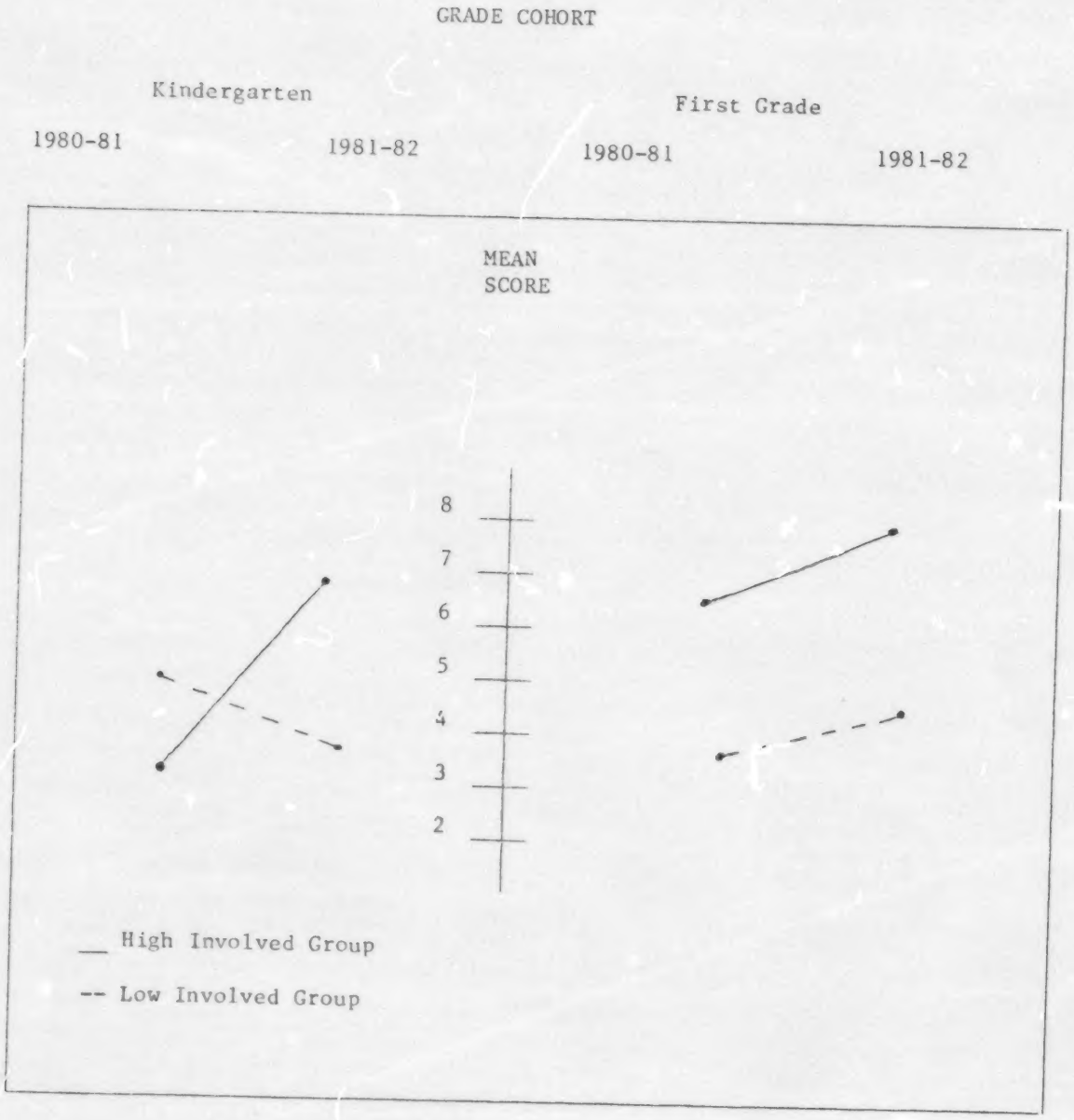

Figure 1. Mean scores for high and low involved groups by year at both levels of grade cohort for the primary form of the Who Should.

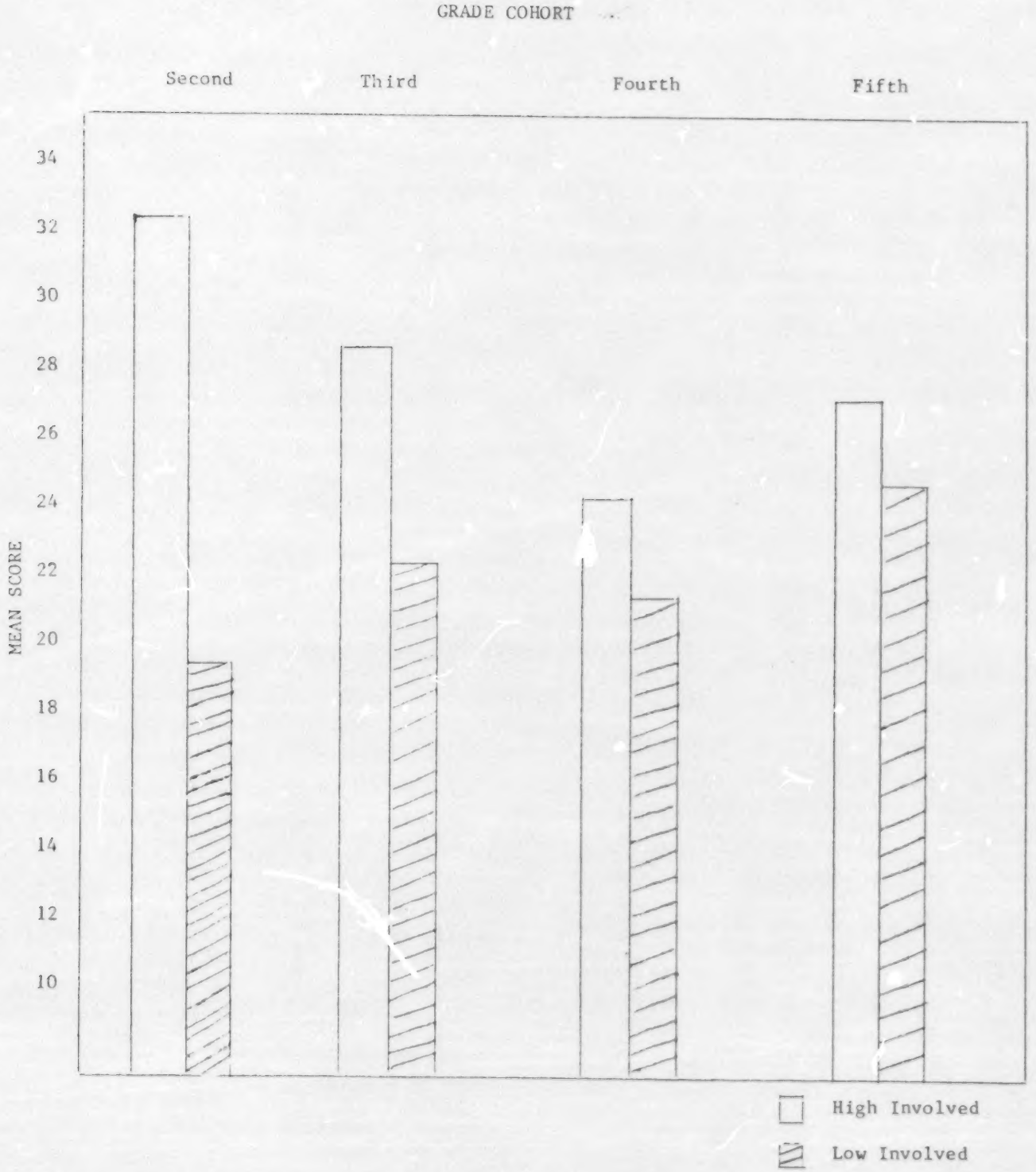

Figure 2. Mean scores for grade cohorts by group (involvement level) on the Who Should Intermediate Form

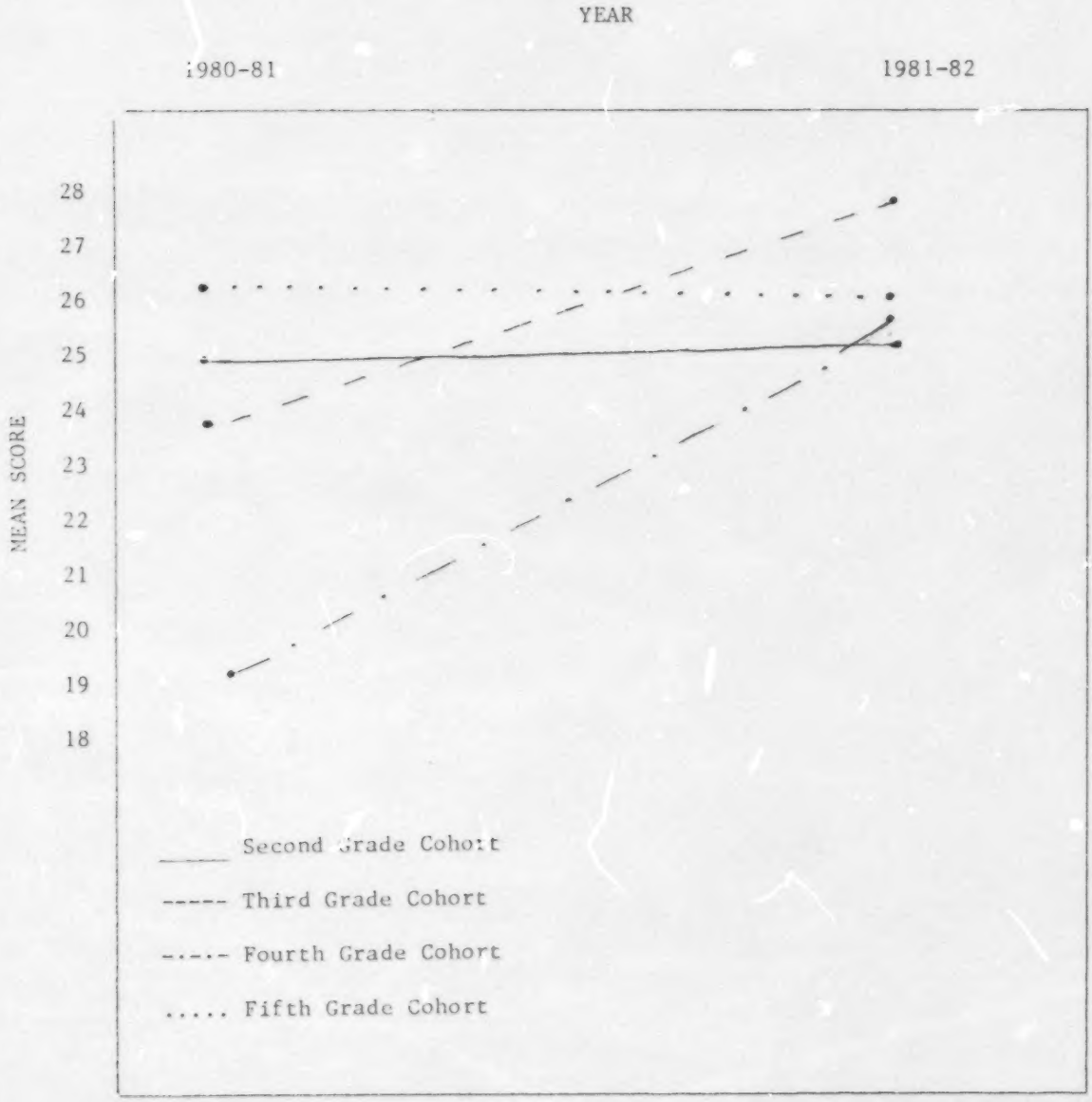

Figure 3. Mean scores of grade cohorts for 1980-81 and 1981-82 on the Who Should (Intermediate Form).

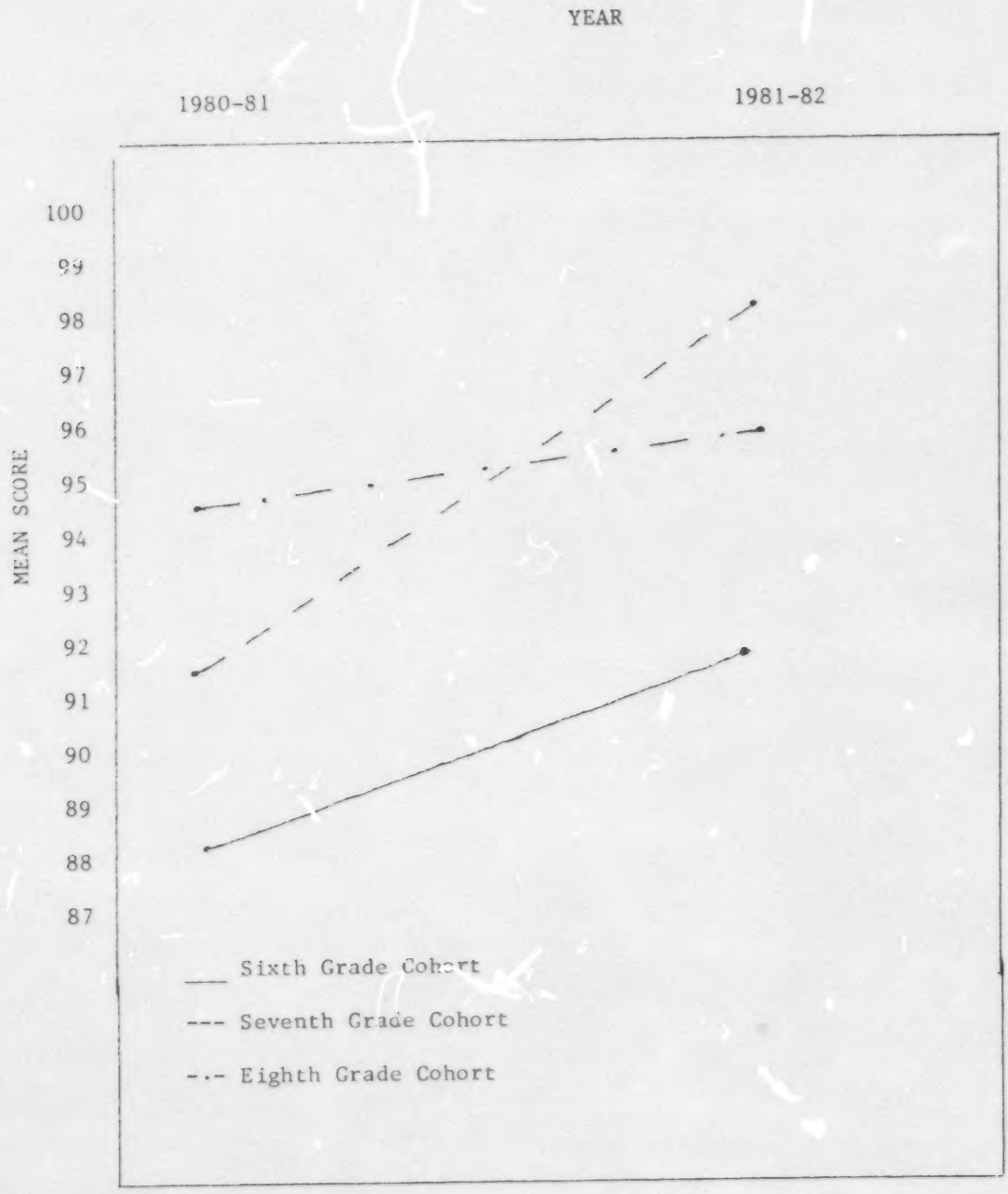

Figure 4. Mean scores for grade cohorts by year on the Your Opinion.

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Abstract

The effect of participation in a two-year equity project on students' attitudes toward sex roles was measured for students in kindergarten through grade twelve. Four separate grade-appropriate written instruments were used to assess the extent to which students' attitudes were stereotypic or nontraditional at the conclusion of both the first and second years of project implementation.

Students' attitudes became less stereotypic during the second year for most groups, but the effects were not uniform as shown by significant grade-by-year interactions. The kindergarten cohort of high involved schools and the seventh grade cohort showed significant movement toward androgyny, while the fourth and third grade cohorts demonstrated noticeable but non-significant gains indicating grade levels at which the greatest attitude change can be anticipated in such a project. Several problems inherent in the collection of longitudinal data are discussed.